

WHAT IS CLAIMED IS:

1. An alkaline battery produced by sealing in an outer package body: a positive mixture comprising at least one selected from manganese dioxide
5 and a nickel oxide, a conducting agent, and an alkaline electrolytic solution (A) containing potassium hydroxide;
a separator; and
a negative mixture containing zinc alloy powder, a gelling agent, and an alkaline electrolytic solution (B) comprising potassium hydroxide,
10 wherein a concentration of potassium hydroxide of the alkaline electrolytic solution (A) is 45wt% or more, and a concentration of potassium hydroxide of the alkaline electrolytic solution (B) is 35wt% or less.
2. The alkaline battery according to claim 1, wherein the concentration of
15 potassium hydroxide of the alkaline electrolytic solution (A) exceeds 50wt%.
3. The alkaline battery according to claim 1, wherein the concentration of potassium hydroxide of the alkaline electrolytic solution (B) is equal to or more than 20wt%.
20
4. The alkaline battery according to claim 1, wherein an alkaline electrolytic solution (C) comprising potassium hydroxide in a concentration of 20 to 40wt% is introduced into the outer package body so as to be absorbed by the separator during assembly of the battery.
25
5. The alkaline battery according to claim 4, wherein at least one selected from the alkaline electrolytic solutions (A), (B), and (C) comprises a zinc compound.
- 30 6. The alkaline battery according to claim 4, wherein the concentrations of potassium hydroxide of the alkaline electrolytic solutions (A), (B), and (C) are adjusted so that the concentrations of potassium hydroxide of the alkaline electrolytic solutions (A), (B), and (C) after assembly of the battery are 30 to 37wt% on average.
- 35 7. The alkaline battery according to claim 1, wherein the zinc alloy powder contains at least one selected from indium, bismuth, and aluminum.

8. The alkaline battery according to claim 7, wherein contents of the at least one selected from indium, bismuth, and aluminum comprised in the zinc alloy powder are 0.03 to 0.07wt%, 0.007 to 0.025wt%, and 0.001 to 0.004wt%,
5 respectively.
9. The alkaline battery according to claim 1, wherein a ratio of the zinc alloy powder that passes through a 200-mesh sieve is 4 to 40wt% with respect to a total weight of the zinc alloy powder.
10. The alkaline battery according to claim 1, wherein the conducting agent comprises graphite, and a ratio of the graphite is 6 to 8.5wt% with respect to a total weight of the manganese dioxide and the nickel oxide.
11. A method for producing an alkaline battery, comprising:
15 disposing a positive mixture comprising at least one selected from manganese dioxide and a nickel oxide, a conducting agent, and an alkaline electrolytic solution (A) containing potassium hydroxide in an outer package body;
20 disposing a separator inside the positive mixture;
introducing an alkaline electrolytic solution (C) comprising potassium hydroxide in a concentration of 20 to 40wt% into the outer package body; and
filling a gap inside the separator with a negative mixture comprising zinc alloy powder, a gelling agent, and an alkaline electrolytic solution (B)
25 comprising potassium hydroxide,
wherein a concentration of potassium hydroxide of the alkaline electrolytic solution (A) is 45wt% or more, and a concentration of potassium hydroxide of the alkaline electrolytic solution (B) is 35wt% or less.
12. The method for producing an alkaline battery according to claim 11, wherein the concentration of potassium hydroxide of the alkaline electrolytic solution (A) exceeds 50wt%.
13. The method for producing an alkaline battery according to claim 11, wherein the positive mixture is formed at a temperature in a range of 35°C to 70°C.
- 35

14. The method for producing an alkaline battery according to claim 11,
wherein the concentrations of potassium hydroxide of the alkaline electrolytic
solutions (A), (B), and (C) are adjusted so that the concentrations of
potassium hydroxide of the alkaline electrolytic solutions (A), (B), and (C)
5 after assembly of the battery are 30 to 37wt% on average.
15. A method for producing an alkaline battery, using a positive mixture
obtained by mixing at least one selected from manganese dioxide and a nickel
oxide, a conducting agent, and an alkaline electrolytic solution comprising
10 potassium hydroxide in a concentration exceeding 50wt% at a temperature in
a range of 35°C to 70°C.
16. An alkaline battery comprising a positive mixture comprising at least one
selected from manganese dioxide and a nickel oxide as a positive active
15 material and a negative mixture comprising a negative active material,
wherein the positive mixture comprises an alkaline electrolytic
solution comprising potassium hydroxide, and
an amount of water comprised in the positive mixture is 8.4 to 10wt%
with respect to a total weight of the positive mixture including the alkaline
20 electrolytic solution.
17. The alkaline battery according to claim 16, wherein a density of the
positive mixture before assembly of the battery is 3.2 to 3.35g/cm³.
- 25 18. The alkaline battery according to claim 16, wherein a concentration of
potassium hydroxide of the alkaline electrolytic solution comprised in the
positive mixture before assembly of the battery is 40wt% or more.
19. The alkaline battery according to claim 16, wherein a total amount of
30 water in the battery is 0.23 to 0.275 g based on 1 g of the positive active
material.
20. The alkaline battery according to claim 16, wherein a concentration of
potassium hydroxide obtained from a potassium amount and a water amount
35 of the alkaline electrolytic solution is 35 to 39.5wt%.
21. The alkaline battery according to claim 16, wherein the alkaline

electrolytic solution comprises a zinc compound.

22. The alkaline battery according to claim 16, wherein the negative active material is zinc alloy powder, and a ratio of the zinc alloy powder that passes
5 through a 200-mesh sieve is 4 to 40wt% with respect to a total weight of the zinc alloy powder.

23. The alkaline battery according to claim 22, wherein the zinc alloy powder comprises at least one selected from indium, bismuth, and aluminum.
10

24. The alkaline battery according to claim 23, wherein contents of the at least one selected from indium, bismuth, and aluminum comprised in the zinc alloy powder are 0.03 to 0.07wt%, 0.007 to 0.025wt%, and 0.001 to 0.004wt%, respectively.
15

25. A method for producing an alkaline battery, using a positive mixture comprising at least one selected from manganese dioxide and a nickel oxide as a positive active material and an alkaline electrolytic solution comprising potassium hydroxide,
20 wherein an amount of potassium hydroxide comprised in the positive mixture used for assembly of the battery is 2.4 to 4wt% with respect to a total weight of the positive mixture including the alkaline electrolytic solution, and an amount of water comprised in the positive mixture after assembly of the battery is 8.4 to 10wt% with respect to a total weight of the positive
25 mixture including the alkaline electrolytic solution.

26. The method for producing an alkaline battery according to claim 25, wherein a concentration of potassium hydroxide of the alkaline electrolytic solution comprised in the positive mixture before assembly of the battery is
30 40wt% or more.

27. The method for producing an alkaline battery according to claim 25, wherein a concentration of potassium hydroxide obtained from a potassium amount and a water amount of the alkaline electrolytic solution comprised in
35 the positive mixture after assembly of the battery is 35 to 39.5wt%.

28. The method for producing an alkaline battery according to claim 25,

wherein a total amount of water in the battery is 0.23 to 0.275 g based on 1 g of the positive active material.

29. The method for producing an alkaline battery according to claim 25,
5 wherein the positive mixture is formed at a temperature in a range of 35°C to 70°C.

30. A method for producing an alkaline battery, using a positive mixture
10 containing at least one selected from manganese dioxide and a nickel oxide as a positive active material and an alkaline electrolytic solution comprising potassium hydroxide,

wherein an amount of water comprised in the positive mixture used
for assembly of the battery is 3.0 to 4.2wt% with respect to a total weight of
the positive mixture including the alkaline electrolytic solution, and

15 an amount of water comprised in the positive mixture after assembly
of the battery is 8.4 to 10wt% with respect to a total weight of the positive
mixture including the alkaline electrolytic solution.

31. The method for producing an alkaline battery according to claim 30,
20 wherein a concentration of potassium hydroxide of the alkaline electrolytic
solution comprised in the positive mixture before assembly of the battery is
40wt% or more.

32. The method for producing an alkaline battery according to claim 30,
25 wherein a concentration of the potassium hydroxide obtained from an amount
of potassium and an amount of water of the alkaline electrolytic solution
comprised in the positive mixture after assembly of the battery is 35 to
39.5wt%.

30 33. The method for producing an alkaline battery according to claim 30,
wherein a total amount of water in the battery is 0.23 to 0.275 g based on 1 g
of the positive active material.

34. The method for producing an alkaline battery according to claim 30,
35 wherein the positive mixture is formed at a temperature in a range of 35°C to
70°C.